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PATENT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

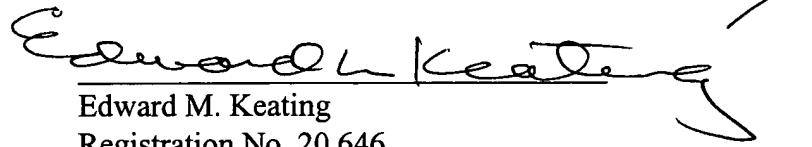
Applicant: LOUIS J. LENICK et al.
Serial No.: 10/091,779
Filed: March 5, 2002
For: BEARING ASSEMBLY
AND LOCKING COLLAR

] Examiner: William C. Joyce

] Art Unit: 3682

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Commissioner for Patents
Alexandria, VA 22313-1450

RESPONSE

This is in response to the Office Action of June 19, 2003. A reconsideration of the rejection of claims 1 and 2 of the application is requested.

In regard to the first rejection under 35 U.S.C. 102(b) as being anticipated by Searles, U.S. Patent No. 1,561,443, claims 1 and 2 call for, inter alia, a locking collar 41 having a fastener screw 45 operable for causing the larger diameter 57 of the locking collar to compress the fingers 27 of the inner ring 15 into engagement with the shaft 13.

In the rejection under 35 U.S.C. 102, the Examiner states that Searles has a compressible locking collar positioned circumferentially about the plurality of fingers defined by

slots 11 with the fastener screw 13 operable for causing the large diameter of the locking collar to compress the fingers into locking engagement with the shaft.

Applicant disagrees with the Examiner's interpretation of Searles. Searles states on page 1, starting at line 67 and continuing through line 84:

"A locking collar is secured on the shaft adjacent the inner ring, and one of these adjacent members is provided with an outer surface eccentric to the bore therethrough, while the other member is provided with a counter bore or an inner surface eccentric to the bore therethrough and adapted to receive the eccentric outer surface on the other member. The collar is preferably held to the shaft, as by means of a set screw, with the eccentric surfaces in engagement with each other. A slight relative rotation between the inner ring and of the collar will cause parts of the ring and the collar to wedge or bind upon each other and upon the shaft, so as to cause both the ring and the collar to positively rotate with the shaft."

Searles further states on page 2, starting on line 1 and continuing to line 16:

"A second collar 8 is fitted on the shaft 9 adjacent to the inner ring 5. In the preferred form shown, one end of the ring 5 is turned down so as to provide a surface 10 which is eccentric to the bore through the ring fitting on the shaft 9. If desired, the end of the ring 5 may be split as indicated at 11-11 to render the same slightly resilient. The collar 8 is provided with a counter bored portion 12 which is eccentric with the main bore through the collar and which is of a size to receive the eccentric surface 10 on the ring 5. If desired, one of the rings, in this case the collar 8, may be held to the shaft 9 as by means of the set screw 13."

Searles further states on page 2, starting at line 20:

"The two rings 5 and 8 are positioned on the shaft 9, and the eccentric portion 10 is introduced into the counter bored recess 12. Since both the parts 10 and 12 are eccentric to the bores through the respective rings, it will be seen that upon a slight relative rotation from the positions shown in Fig. 3 the rings will grip each other and both rings will grip or clutch the shaft 9. Fig. 3 shows the parts before the slight relative rotation heretofore mentioned, while Fig. 4 represents the parts after such relative rotation, and in gripped or locked position.

It will be obvious that the set screw 13 is a merely a precautionary means, and the locking function will be performed irrespective of the presence of the set screw. The set screw, however, is desirable in that a lateral shifting of the collar on the shaft is prevented before the parts are locked and a more secure lock is assured when the collar is positively held on the shaft."

From the foregoing, it is apparent that Searles utilizes an eccentric surface 10 on the fingers of the ring 5 and the collar 8 is provided with a counter bored portion 12 which is eccentric to the main bore so the engagement of these two eccentric surfaces upon rotation provides the locking and not the set screw 13. The set screw merely holds the collar to the shaft and as can be seen in Figs. 3 and 4 of Searles is threaded through the ring 10 so that it can't compress this ring.

For the foregoing reasons, a reconsideration of the rejection of claims 1 and 2 as being anticipated by Searles, 1,561,443 under 35 U.S.C. 102(b) is requested.

A reconsideration of the rejection of claims 1 and 2 under 35 U.S.C. 103(a) as being unpatentable over Searles in view of LaRou, Patent No. 4,537,519 is also requested. Applicants agree with the Examiner as stated in Section 4 of the official action that Searles does not show the locking collar being resilient such that the screw reduces the inside diameter of the collar to compress the fingers onto the shaft. Applicants further agree that LaRou teaches the use of a collar 23 which is resiliently compressible by a screw 26 to compress specially notched fingers against the shaft. However, applicants disagree that it would be obvious to one of ordinary skill in the art to modify the locking collar of Searles to be resiliently compressible by a screw, as taught by LaRou et al. because, as previously discussed, Searles et al. utilizes the eccentric surfaces to lock the rings 5 and 8 to the shaft and thus would have no reason to make the collar 8 resiliently compressible by a screw. It appears that Searles relies upon a slight rotation of the rings 5 and 8 relative to each other for the rings to grip each other and the shaft so that compression of the collar 8 might be counter productive. Applicants' construction as called for in claims 1 and 2 eliminates the need to machine notches in the fingers as taught by LaRou

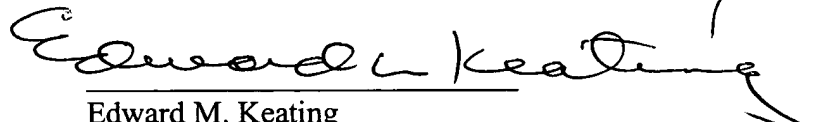
'519 which machining can weaken the fingers to the extent that the fingers could break because of excess tightening.

Claim 1 calls for the smaller inside diameter 57 of the locking collar 41 to define an annular, radially extending wall 59 which engages the outer annular end walls of the fingers so that the locking collar engages only the outer ends of the fingers to bend them against the shaft. LaRou does not have a smaller inner diameter which limits the extent that its locking collar fits over the fingers but depends on the length of the cut outs 24 in the fingers to determine the amount of contact between the fingers and the locking ring.

For the foregoing reasons, it is believed that the hypothetical combination of Searles '443 in view of LaRou et al. '519 under 35 U.S.C. 103(a) fails to teach or suggest the structure called for in claims 1 and 2 of this application.

For the foregoing reasons a reconsideration and allowance of claims 1-2 are requested.

Respectfully submitted,


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